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ADDITIONS TO THE MARINE FAUNA OF THE NORTHERN TERRITORY

1. *DECAPOD CRUSTACEA: CARIDEA AND STENOPODIDEA*

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ABSTRACT

Records are provided of the occurrence of 25 species of caridean shrimp and one stenopodidean shrimp not previously reported from the waters of the Northern Territory, Australia. Two species, *Leptochela pugnax*, and *Processa aequimana* are recorded from Australian waters for the first time and *Chernocaris placunae*, also new to the Australian fauna, is reported for the second time only.

INTRODUCTION

In common with many other groups of marine animals, the crustacean fauna of the Northern Territory of Australia has been little studied. Recent preliminary studies have indicated that a rich fauna is present. Many common and well known Indo-West Pacific marine species have never been recorded in the zoological literature as occurring in the Northern Territory. The present report confirms the occurrence of several of these in Northern Territory waters together with details of some less common species and three that are new to the Australian fauna. Subsequent reports of

further additional species will be published as data becomes available.

The specimens are deposited in the collections of the Northern Territory Museum and the catalogue numbers are indicated at the end of the section on material.

ATYIDAE De Haan, 1849

Caridina gracilirostris De Man

Restricted synonymy:

Caridina gracilirostris De Man, 1892:399.

Material — 7 (4 ov. ♀), Darwin River Dam, 1 November 1981, coll. J. R. Hanley, (NTM Cr.000084).

Distribution — Previously recorded in Australian only from Cairns. Also known from Indonesia and the Philippines.

Remarks — Collected from 0.1 m depth over dead leaf litter.

PASIPHAEIDAE Dana, 1852

Leptochela pugnax De Man

Restricted synonymy:

Leptochela pugnax De Man, 1916:148.

Material — 28 spms., Cape Don, Cobourg Peninsula, 11°20.0'S. 131°48.3'E., 20 m, trawl, 13 October 1981, coll. A. J. Bruce, (NTM Cr.000119).

Distribution — Not previously recorded from Australian seas. Type material recorded from five localities between Java and Moluccas. Otherwise recorded from South Africa to Japan and the Philippines.

Remarks — The specimens were collected in a fine meshed trawl over muddy sand (but may have been caught in the overlying water column), at night from 2100-2130 hr.

PALAEEMONIDAE Samouelle, 1819

Subfamily Palaemoninae Dana, 1852

Palaemonetes australis Dakin

Restricted synonymy:

Palaemonetes australis Dakin, 1915: 571-574.

Material — 2, Ludmilla Creek, Darwin, 15 September 1981, coll. J. N. A. Hooper, (NTM Cr.000045).

Distribution — Previously recorded only from S.W. Australia.

Remarks — Not known from outside Australia. Collected from pools at the mouth of a mangrove creek.

Leandrites cyrtorhynchus

Fujino & Miyake

Restricted synonymy:

Leandrites cyrtorhynchus Fujino & Miyake, 1969 143:149, figs. 1-3.

Material — 1, Six Mile Buoy, Darwin Harbour, 12 m, 30 April 1981 coll. T. Griffith, (NTM Cr.000002).

Distribution — Previous Australian records are only from the southern Great Barrier Reef. Also known from East Africa to Japan and New Caledonia.

Remarks — A pair of specimens were observed by the collector, engaged in cleaning a frog fish, but only one was caught.

Subfamily Pontoniinae Kingsley, 1878

Palaemonella rotumana (Borradaile)

Restricted synonymy:

Periclimenes rotumanus Borradaile, 1898: 1005, pl. 63 fig. 5.

Palaemonella rotumana — Bruce, 1970: 276-279, fig. 2, pl. 1 e-f.

Material — 1♂, 1♀, Stokes Hill Wharf, Darwin Harbour, 8 June 1976, coll. B. Smith, A. J. Dartnoll, G. F. Gow, (NTM Cr. 000076).

Distribution — First recorded from the Low Isles, Queensland, in Australian waters by McNeill (1968) and subsequently from the Capricorn Islands and Moreton Bay, Queensland. Common through the whole Indo-West Pacific region and also found in the eastern Mediterranean Sea.

Remarks — The specimens were collected from wharf pilings removed from the sea. The male is unusually large with a post-rostral carapace length of 5.4 mm and has a rostral dentition of 10/4.

Periclimenes tenuipes Borradaile

Restricted synonymy:

Periclimenes tenuipes Borradaile, 1898a: 384.

Material — 1♂, Anglers Reef, Lee Point, Darwin, 12 m, 26 April 1981, coll. T. Griffith, (NTM Cr.000003).

Distribution — Previously recorded from Wistari Reef, Capricorn Islands, Queensland. Known from East Africa to

Palau and Enewetak Atoll, Marshall Islands.

Remarks — Usually apparently free-living and nocturnal, but has also been reported as associated with anemones (Read, 1974) and feeding on their mucus.

Periclimenes amymone De Man

Restricted synonymy:

Periclimenes amymone De Man, 1902: 829, pl. 25 fig. 53.

Material — 2, Dudley Point, Darwin, low water spring tide level on reef flat, 17 September 1981, coll. A. J. Bruce, (NTM Cr.000061).

Distribution — Previously recorded from Heron Island and One Tree Island, Capricorn Islands, Queensland. Also known from the Nicobar Islands to Samoa.

Remarks — The specimens were collected from small colonies of *Acropora* in shallow muddy reef flat pools.

Periclimenes brevicarpalis Schenkel

Restricted synonymy:

Ancylocaris brevicarpalis Schenkel, 1902: 563, pl. 13 fig. 21.

Periclimenes (Ancylocaris) brevicarpalis — Kemp, 1922: 185-191, figs. 40-42, pl. 6 fig. 8.

Material — 1 juv., Dudley Point, Darwin, intertidal, 19 September 1981, coll. A. J. Bruce, (NTM Cr.000120).

Distribution — Reported from the Great Barrier Reef by Saville-Kent (1873) and subsequently from numerous Queensland localities and also the Monte Bello Islands, Western Australia. Common throughout the whole Indo-West Pacific region in suitable habitats, excluding Hawaii and South east Polynesia.

Remarks — The single juvenile example was collected from an unidentified anemone in an intertidal pool at low water spring tide level.

Periclimenes holthuisi Bruce

Restricted synonymy:

Periclimenes holthuisi Bruce, 1969: 258-259.

Material — 1♂, 1 ov.♀, Sandy Island No. 2, Cobourg Peninsula, 6-7 m, 22 October 1981, coll. J. R. Hanley, scuba, (NTM Cr.000117).

Distribution — Previously recorded from Bowen, and later from Peloris Island, Moreton Bay and Heron Island, Queensland. Otherwise known from the Red Sea to the Caroline Islands and from Japan to New Caledonia.

Remarks — The two specimens were associated with an unidentified anemone. This species also associates with jellyfish and certain corals.

Periclimenes spiniferus De Man

Restricted synonymy:

Periclimenes petithouarsi var. *spinifera* De Man, 1902: 824.

Periclimenes (Falciger) spiniferus — Borradaile, 1917: 324, 369, pl. 52 fig. 1.

Material — 2, Dudley Point, Darwin, low spring tide level, reef flat, 18 September 1981, coll. A. J. Bruce, (NTM Cr.000131).

Distribution — First recorded in Australia from North West Isle, Capricorn Group, Queensland, by McNeill (1926) and later from Heron Island. Also known from the Low Isles and Lizard Island. Known from most of the Indo-West Pacific region except the NW Indian Ocean and Red Sea.

Remarks — Present specimens were collected from muddy reef flat pools with corals and algae.

Anchistus australis Bruce

Restricted synonymy:

Anchistus australis Bruce, 1977: 56-62, figs. 7-9.

Material — 2♂, 2 ovig. ♀, Coral Bay, Port Essington, 3m, 23 June 1981, coll. A. J. Bruce, (NTM Cr.000091).

Distribution — Previously recorded from Capre Cay, Swain Reefs; Michaelmas Reef, and Heron Island, Queensland, in

Australian waters. Otherwise known only from Fiji.

Remarks — The two pairs of specimens were each found in the branchial cavity of the giant clam, *Tridacna squamosa*.

Anchistus custos (Forskål)

Restricted synonymy:

Cancer custos (Forskål), 1775: 94.

Anchistus custos — Holthuis, 1952: 105-109, figs. 43-401.

Material — 3♂, 3♀ (2 ovig.), Coral Bay, Port Essington, 6 m, 17 October 1981, coll. A. J. Bruce, (NTM Cr.000133).

Distribution — First recorded in Australian waters by Miers (1884) from Port Molle and Bowen, Queensland, and Shark Bay, Western Australia. Also known from the Monte Bello Islands, St. Vincents Gulf and the Great Barrier Reef. Common throughout the Indo-West Pacific region.

Remarks — The specimens were found, as is usual for this species, in association with bivalves of the genus *Pinna*, *P. muricata*.

Conchodytes monodactylus Holthuis

Restricted synonymy:

Conchodytes monodactylus Holthuis, 1952: 200-204, figs. 96-98.

Material — 1♂, 1 ovig. ♀, Sandy Island No. 2, Cobourg Peninsula, 8-9 m, 22 October, 1981, coll. P. Horner, NTM Cr. 000092).

Distribution — In Australia, previously known only from specimens from Magnetic Island, Queensland. Sparsely recorded elsewhere, from Indonesia, Singapore, Hong Kong and Taiwan.

Remarks — The pair of specimens were found in association with a fan-shell, *Pinna bicolor*.

Chernocaris placunae Johnson

Restricted synonymy:

Chernocaris placunae Johnson, 1967: 500-511, 522-523, figs. 1-12.

Material — 6♂, 1♀, 5 ovig. ♀, F.V. 'Anson', Arafura Sea, 12°58.0'S, 132°10.0'E., trawl, 27 m, 19 October 1981, coll. A. J. Bruce, (NTM Cr.000102).

Distribution — Not previously recorded from Australian waters. Known only from the original pair of type specimens collected from Singapore.

Remarks — All specimens were found in male-female pairs in the mantle cavity of the bivalve *Placuna placenta*, as were the type specimens. The very thin valves of this mollusc permit the females of the shrimp to be discerned through the valves, where they are rendered conspicuous by their bright orange ovaries and ova.

Ischnopontonia lophos (Barnard)

Restricted synonymy:

Philarius lophos Barnard, 1962: 242-243, fig. 2.

Ischnopontonia lophos — Bruce, 1966: 585-589, figs. 1-5.

Material — One second pereopod only, Dudley Point, Darwin, low water spring tide level, 18 September 1981, coll. A. J. Bruce.

Distribution — Previously recorded in Australia only from Great Palm, Orpheus, Fantome and Heron Islands, Queensland. Common in the western Indian Ocean and also known from Singapore and Fiji.

Remarks — The single characteristic chela was found attached to a corallite of the typical host animal, *Galaxea fascicularis*. The animal presumably escaped during removal of the host from the tide pool.

Periclimenaeus tridentatus (Miers)

Restricted synonymy:

Coralliocaris? tridentatus Miers, 1884: 294, pi: 32 fig. C.

Periclimenaeus tridentatus — Holthuis, 1952: 140-146, figs. 63-65 (partim).

Material — 1♂, 1♀, Coral Bay, Port Essington, 3m, 23 July 1981, coll. A. J. Bruce, (NTM Cr.000097).

Distribution — Originally described from

Murray Island, Torres Straits and since recorded from Heron Island and Wistari Reef, Queensland. Otherwise known with certainty only from Singapore and the Sulu Archipelago.

Remarks — The pair of specimens was found in association with a colonial ascidian. Other examples have previously been found in association with ascidians of the genus *Diplosoma*.

Philarius imperialis (Kubo)

Restricted synonymy:

Harpilius imperialis Kubo, 1940: 1-4, figs. 1-3.

Philarius imperialis — Holthuis, 1952: 15, 151.

Material — 1♂, 1 ovig. ♀, Coral Bay, Port Essington, intertidal, low water spring tide, 17 October 1981, coll. A. J. Bruce, (NTM Cr.000132).

Distribution — First recorded from Heron Island, Queensland, and Restoration Rock, Coral Sea, by Patton (1966) and subsequently from Lizard Island, Queensland. Otherwise known sparsely from the Red Sea to the Marshall Islands.

Remarks — The pair of specimens were found in association with an *Acropora* colony. No other shrimps were present. The specimens are a pale yellow green colour with dark brown-black longitudinal striae.

Coralliocaris graminea (Dana)

Restricted synonymy:

Oedipus gramineus Dana, 1852: 25.

Coralliocaris graminea — Stimpson, 1860: 38.

Material — 1♂, 2 ov. ♀, Coral Bay, Port Essington, intertidal, low water spring tide, 17 October, coll. A. J. Buce, (NTM Cr. 000118).

Distribution — Initially recorded in Australia from the Palm Islands, Queensland and subsequently from numerous localities in Great Barrier Reef waters, and the

Monte Bello Islands, Western Australia. Common throughout the Indo-West Pacific region but absent from the Hawaiian Islands.

Remarks — The specimens showed the characteristically striated colour pattern and had shallow rostral laminae with dentition of 5/1 (♂) and 5/2 (♀). The specimens were associated with a coral of the genus *Acropora*.

ALPHEIDAE Rafinesque

Synalpheus neomeris (De Man)

Restricted synonymy:

Alpheus neomeris De Man, 1897: 734, fig. 61 ade, (*partim*).

Synalpheus neomeris — Coutière, 1906: 869, fig. 1.

Material — 1♂, 1 ov. ♀, F. V. 'Anson', Arafura Sea, 12°58.0'S. 132°10.0'E, trawl, 27 m, 19 October 1981, coll. A. J. Bruce, (NTM Cr.000103).

Distribution — Previously recorded in northern Australian waters from Torres Straits and the Gulf of Carpentaria, and from Cape Carnarvon and Houtman Abrolhos Islands, and south to Bundaberg in Queensland. Also known from the Red Sea, to Japan and Indonesia, commonly in association with alcyonarian hosts.

Remarks — The specimens were found together in a small alcyonarian, *Dendronephthea* sp. and were an opaque white colour. The post-orbital carapace lengths measure: ♂ 8.6; ♀ 0.5 mms.

HIPPOLYTIDAE Bate, 1888

Thor paschalis (Heller)

Restricted synonymy:

Hippolyte paschalis Heller, 1861: 296, pl. 3 fig. 24.

Thor paschalis — Kemp, 1914: 94-95, pl. 1 figs. 6-10.

Material — 1♂, 7 ovig. ♀, Dudley Point, Darwin, low water spring tide level, 17

September 1981, coll. A. J. Bruce (NTM Cr.000098).

Distribution — First recorded in Australian waters by McNeill (1968) from the Low Isles, there appear to have been no further records. Otherwise known from the Red Sea and East Africa to Indonesia and the Marianna Islands.

Remarks — The specimens were collected from shallow reef flat pools with an abundant algal growth.

Lysmata vittata (Stimpson)

Restricted synonymy:

Hippolytina vittata Stimpson, 1860: 26.

Material — 1♀, Bullocky Point, Darwin, tide pool, 2 November 1981, coll. J. N. A. Hooper, (NTM Cr.000069).

Distribution — Recorded from the Low Isles, Queensland, by McNeill (1968). There appear to have been no subsequent Australian records. Also known from the Red Sea and East Africa to Indonesia and Japan.

Remarks — The specimen was obtained from beneath stones in a shallow pool on a sandy beach.

Hippolyte ventricosa H. Milne Edwards

Restricted synonymy:

Hippolyte ventricosus Milne Edwards, 1837:371.

Material — 5 ovig. ♀, 2 juv., Dudley Point, Darwin, intertidal, 17 September 1981, coll. A. J. Bruce, (NTM Cr.000121).

Distribution — First recorded in Australian waters, as *Virbius australiensis*, by Stimpson (1860), from Port Jackson, New South Wales, and subsequently from St. Vincent Gulf, South Australia. Common throughout Indo-West Pacific waters.

Remarks — The specimens were obtained from shallow intertidal reef flat pools. There appears to have been no previous records of this species from tropical Australian waters but a related form, *H. nr. ventricosus*, has been reported from

Moreton Bay, Queensland (Wadley, 1978). A group of closely related species may be represented.

Phycocaris simulans Kemp

Restricted synonymy:

Phycocaris simulans Kemp, 1916: 392-396. fig. 2, pl. 36 fig. 2

Material — 1♂, Dudley Point, Darwin, intertidal, LWS, 17 September 1981, coll. A. J. Bruce, (NTM Cr.000065).

Distribution — Previously recorded in Australian waters only from Heron Island, Queensland. Otherwise known only from the type locality in the Andaman Islands.

Remarks — This small species is remarkable for its close resemblance to an algal fragment. The Darwin specimen was a brownish colour but otherwise similar to the Heron Island specimen.

Saron marmoratus (Olivier, 1811)

Restricted synonymy:

Palaemon marmoratus Olivier, 1811: 663.

Saron marmoratus — Borradaile, 1898: 1009.

Material — 1, Dudley Point, Darwin, intertidal, LWS, 18 September 1981, coll. A. J. Bruce, (NTM Cr.000099).

Distribution — First recorded from Australian seas by McNeill (1926) with a specimen from Northwest Islet, Queensland, and later from other Great Barrier Reef localities. Known throughout the entire Indo-West Pacific region from the Red Sea to Hawaii, the Marquesas and Tahiti.

Remarks — Normally one of the commonest tropical reef flat species, these shrimps appear comparatively rare in the waters of the Northern Territory.

Processa aequimana (Paulson)

Restricted synonymy:

Nika aequimana Paulson, 1875: 97, pl. 14 figs 6, 6a.

Processa aequimana — Nobili, 1906: 79.

Material — 5 spms., Danger Point, Port

Bremer, Cobourg Peninsula, 1 May 1982, coll. A. J. Bruce (NTM Cr.000411).

Distribution — Not previously recorded from Australian waters. Known from the Red Sea, Mocambique, Japan, Vietnam, and Indonesia.

Remarks — The nearest record is from Djangkar, Java, Indonesia. The present specimens were trawled from a depth of 4 m over a sandy substrate.

STENOPODIDAE Smith & Weldon, 1909

Microprosthema validum Stimpson

Restricted synonymy:

Microprosthema validum Stimpson, 1860: 45.

Material — 1, Coral Bay, Port Essington, 3-4 m, 23 June 1981, coll. J. N. A. Hooper, (NTM Cr.000074).

Distribution — First recorded from Australia, as *Stenopus robustus*, from Hope Island, Queensland, by McNeill (1926). Also known from Masthead Island, Queensland, and Port Jackson, New South Wales. Further distribution extends from the Red Sea to Japan and Indonesia.

Remarks — These small stenopid shrimps are generally found in pairs but the mate was not collected in the present case.

RESUMÉ

Des details sont pourvus de 25 espèces de crevettes caridiennes et une crevette stenopodidiene qui constituent des nouvelles occurrences dans le Northern Territory d'Australie. Trois de ces espèces n'ont pas encore été raccordées en Australie, *Leptochela pugnax*, *Chernocaris placunae* et *Processa aequimana*. La plupart des autres espèces sont connues en Australie seulement au sud du Grand Recif Barrière, Queensland.

LITERATURE CITED

- Barnard, K. H. 1962. New Records of marine Crustacea from the East African region. *Crustaceana* **3**(3): 239-245, figs. 1-2.
- Borradaile, L. A. 1898. On Some Crustaceans from the South Pacific. III. *Proc. zool. Soc. Lond.*, **1898**: 1000-1015, pls. 63-65.
- 1898a. A Revision of the Pontoniidae, *Ann. Mag. nat. Hist.*, (7) **2**(2): 376-391.
- 1917. On the Pontoniinae. The Percy Sladen Trust Expedition to the Indian Ocean in 1905, under the leadership of Mr J. Stanley Gardiner. *Trans. Linn. Soc. Lond., zool.*, (2) **17**: 323-396, pls. 52-57.
- Bruce, A. J. 1966. Notes on some Indo-Pacific Pontoniinae, XI. A re-examination of *Philarius lophos* Barnard, with the designation of a new genus *Ischnopontonia*. *Bull. mar. Sci.*, **16**(3): 584-598, figs. 1-5.
- 1968. Preliminary descriptions of sixteen new species of the genus *Periclimenes* Costa, 1844 (Crustacea, Decapoda, Natantia, Pontoniinae). *Zool. Meded.*, Leiden, **43**(20): 253-278.
- 1970. Observations on the Indo-West Pacific species of the genus *Palaeimonella* Dana, 1852 (Decapoda, Pontoniinae). *Crustaceana*, **19**(3): 273-287, figs. 1-7, pl. 1.
- 1977. Pontoniine shrimps in the collections of the Australian Museum. *Rec. Aust. Mus.*, **31**(2): 39-81, figs. 1-16.

- Coutière, J. 1905. Marine Crustacea, XV. Les Alpheidæ. In: J. Stanley Gardiner (ed.), Fauna and Geography of the Maldivæ and Laccadive Archipelagoes, 2(4): 852-921, figs. 127-139, pls. 7-87.
- Dakin, W. J. 1915. Fauna of Western Australia. IV. *Palaemonetes australis* sp. nov., being the first record of the genus in Australia. Proc. zool. Soc. Lond., 1915: 571-574, pl. 1.
- Dana, J. D. 1852. Conspectus Crustaceorum quæ in Orbis Terrarum circumnavigatione, Carole Wilkes e Classe Reipublicæ Foederatæ e Duce, lexit et descripsit. Proc. Acad. nat. Sci., Philad., 1852: 10-28.
- Forskål, P. 1775. Descriptiones Animalium, Avium, Amphibiorum, Piscium, Insectorum, Vermium, 1-19, i-xxxii, 1-164.
- Fujino, T. and S. Miyake, 1969. On two new species of palaemonid shrimps from Tanabe Bay, Kii Peninsula, Japan (Crustacea, Decapoda, Palaemonidae). Publ. Seto Mar. Lab., 17(3): 143-154, figs. 1-5.
- Hayashi, K.-I. 1975. The Indo-West Pacific Processidae (Crustacea, Decapoda, Caridea). J. Shimonoseki Coll. Fish., 24(1): 47-145, figs. 35.
- Heller, C. 1861. Synopsis der im rothen Meeres vorkommenden Crustaceen. Verhand. zool.-bot. Ges. Wien, 11: 3-32.
- Holthuis, L. B. 1952. The Decapoda of the Siboga Expedition. XI. The Palaemonidae collected by the Siboga and Snellius Expeditions with remarks on other species. II. Subfamily Pontoniinae. Siboga Exped. Mon., 39a¹⁰: 1-252, figs. 1-110, tab. 1.
- Johnson, D. S. 1967. On some commensal decapod crustacea from Singapore (Palaemonidae and Porcellanidae). J. Zool., Lond., 153: 449-526, figs. 1-17.
- Kemp, S. 1914. Notes on Crustacea Decapoda in the Indian Museum. V. Hippolytidae. Rec. Indian Mus., 10: 81-129, pls. 1-7.
- 1922. Notes on Crustacea Decapoda in the Indian Museum. XV. Pontoniinae. Rec. Indian Mus., 24: 113-288, figs. 1-105, pls. 3-9.
- Kubo, I. 1940. A new shrimp, *Harpilius imperialis*. J. Imp. Fish. Inst., Tokyo, 34: 1-4, figs. 1-3.
- Man, J. G. De. 1892. Decapoden des Indischen Archipels. Zool. Ergeb., 2: 295-527.
- 1897. Bericht über die von Herrn Schiffscapitan Storm zu Atjeh, an den Westlichen Küsten von Malakka, Borneo and Celebes sowie in der Java-See Gesammelten Decapoden und Stomatopoden, V. Zool. Jb. Syst., 9: 725-790; 10: pls. 12-14.
- 1902. Die von Herrn Professor Kükenthal in Indischen Archipel gesammelten Dekapoden und Stomatopoden. In: Kükenthal, W., Ergebnisse einer zoologischer Forschungsreise in den Molukken, und Borneo. Abh. Senckeb. Naturf. Ges., 25: 467-929, pls. 19-27.
- 1961. Diagnoses of New Species of Macrurous Decapod Crustacea from the Siboga Expedition. Zool. Meded., Leiden, 2: 147-151.
- McNeill, G. A. 1926. Crustacea. The Biology of North-West Islet, Capricorn Group. J. Aust. Zool., 4: 299-318, figs. 1-2, pl. 41.
- 1968. Crustacea, Decapoda and Stomatopoda. Great Barrier Reef Exped. Sci. Rep., 7(1): 1-98, figs. 1-2, pls. 1-2.
- Miers, E. J. 1884. Crustacea. Report of the Zoological Collections made in the Indo-Pacific Ocean during the Voyage of H.M.S. "Alert", 1881-2: 178-322, 513-575, pls. 18-35, 46-52.
- Milne-Edwards, H. 1837. Arachnides, Crustacés, Annélides, Cirrhipèdes. In: Lamarck, J.B.P.A. de, Histoire naturelle des Animaux sans Vertèbres, présentent les caractères

généraux et particuliers de ces animaux, leur distribution, leur classes, leurs familles, leurs genres, et la citation des principales espèces qui s'y rapport: précédée d'une introduction offrant la Détermination des caractères essentiels de l'Animal, la Distinction du végétal et des autres corps naturels; enfin, l'Exposition des principes fondamentaux de la Zoologie, ed. 2, **5**: 1-699.

- Nobili, G. 1906. Fauna Carcinologique de la Mer Rouge. Decapodes et Stomatopodes. Ann. Sci. nat. Zool., (9) **4**: 1-347, pls. 1-11.
- Olivier, A. G. 1811. Encyclopédie méthodique. Histoire naturelle. Insectes, **8**: 652-657.
- Patton, W. K. 1966. Decapod Crustacea commensal with Queensland branching corals. Crustaceana, **10** (3): 271-295, figs. 1-3.
- Read, K. R. H. 1974. The rock islands of Palau. Oceans, **7** (6): 10-17, figs. 1-10.
- Saville-Kent, W. 1893. The Great Barrier Reef of Australia; its Products and Potentialities, i-xvii, 1-387, text figs., pls. 1-48, chromoplates 1-16, 1 map.
- Schenkel, E. 1902. Beitrag zur Kenntnis der Dekapoden fauna von Celebes. Verh. naturf. Ges. Basel, **13**: 485-585, pls. 7-13.
- Stimpson, W. 1860. Prodromus descriptionis animalium evertibratorum quae in Expeditione ad Oceanum Pacificum Septentrionalem a Republica Federato missa, C. Ringgold et J. Rodgers Ducibus, Observavit et descripsit. Proc. Acad. nat. Sci. Philad., **1860**: 22-48.
- Wadley, V. A. 1978. A check list and illustrated key to the epibenthic shrimps (Decapoda : Natantia) of Moreton Bay, Queensland. CSIRO, Div. Fish. Oceanog., **99**: 1-24, figs. 1-10.



